1850MNRAS..10..139D

those used in steam-engines, the extra power being absorbed by a brass friction-wheel.

"There are seven negative eye-pieces attached to the telescope, the powers of which vary from 45 to 350, and two single lenses of 400 and 500 respectively.

"The positive eye-pieces of the micrometer are six in number, the powers of which vary from 50 to 420.

"The position-circle of the micrometer is divided on silver, and reads by two opposite verniers to single minutes of space. The heads of the screw are each divided into 100 parts, and by careful estimation each division may be subdivided into 5ths or 10ths.

"As evidence of the quality of the object-glass, it may be added that I can readily see the two companions of τ *Orionis*, one of which is rated by Captain Smyth as of the 15th mag., Herschel's '*debilissima*' couple between ε and 5 *Lyræ*. I have also frequently seen, and under rare atmospheric circumstances, have caught up, the 5*th star* in the great nebula of *Orion*. The star 36 *Andromedæ*, the separation of which Sir J. Herschel adduces as a proof of the excellence of his celebrated 7-foot achromatic of 5 *inches aperture*, I have seen with power 400 completely severed.

"Both the building and the mounting of the instrument are remarkably firm and steady.

"The whole of the workmanship of this equatoreal, both optical and mechanical, is by Mr. Cooke, upon whom it reflects great credit.

"It is proposed to devote this instrument to an examination of a selected list of double stars, taken from Smyth's admirable '*Cycle*.'"

Note by Mr. Dawes, to his late Paper, "On the Phenomena attending the Disappearance of Saturn's Ring."

"In my paper lately presented to the Society, 'On the Phenomena attending the Disappearance of *Saturn's* Ring,' I have stated that the brightest points visible on the obscure surface of the ring, namely, the eastern and western extremities, receive reflected light from *one-half only* of the illuminated surface of *Saturn*, which would be seen from them as a *half moon*.

"Soon after that paper was sent, it occurred to me that, as the plane of the ring coincides with the planet's equator, the parts of the ring in question would receive reflected light from *one quarter only* of *Saturn's* illuminated hemisphere, which would be seen from them as *the northern or the southern half of a half moon*. The *base* of this illuminated quadrant would appear *in the horizon;* and the angle subtended by it in *azimuth*, as seen from the exterior portion of the inner ring, would be about 27½ degrees; while, in consequence of the oblateness of *Saturn's* form, the *altitude* of the quadrant will be only about 25 degrees.

Downloaded from http://mnras.oxfordjournals.org/ at University of North Dakota on June 11, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1850MNRAS..10..140A

"This consideration greatly diminishes the probability of the reflected light received from *Saturn* by the extremities of the ring being sufficient to render its obscure surface so bright, that portions of it should rival the satellites themselves in brilliance, and proportionably increases the force of the argument in favour of a twilight produced by refraction of the solar rays.

"Respecting the invisibility of the *edge* of *Saturn's* ring, the testimony of Sir John Herschel is of great importance. In his *Outlines of Astronomy*, page 316, *note*, he says, 'Its disappearance was *complete* when observed with a reflector 18 inches in aperture, and 20 feet in focal length, on the 29th of April, 1833, by the author.'

"In my quotation on this subject from Sir W. Herschel, an erratum occurs in page 50, line 35, of the printed *Monthly Notices*, vol. x.; where, for 'any telescopes,' read 'my telescopes.'"

Error in the Histoire Céleste. By the President.

The star Lalande 11946, as named in Lalande's Catalogue published by the British Association, appears, on the authority of Mr. Maclear, to be 1^m in error in right ascension.

Mr. Maclear has observed with the equatoreal all the stars in the immediate neighbourhood, and finds the following:—

R.A.			N.P.D.			Mag.
h	m	s	°	′	″	
6	7	35	64	27	50	9
6	9	25	64	25	8	7½
6	9	26	64	29	55	9½
6	9	26	64	36	10	8½

Now Lalande 11946, reduced with sufficient accuracy to the beginning of the present year, 1850, gives,

R.A.	N.P.D.
$6^h\ 8^m\ 39^s$	$64^\circ\ 27'\ 44''$,

which agrees pretty well with the first of the above list, on the supposition that Lalande's R.A. is too great by 1^m.

Again, the second of Maclear's list differs from the first by $1^m\ 50^s$, and Lalande 11946 differs from 11977 (observed in sequence on the same evening) by $0^m\ 50^s$; and, the second of Maclear being undoubtedly identical with No. 11977, it thus appears also that No. 11946 is in error 1^m in excess.

Lastly, it would appear that Lalande 11975 is identical with 11977, and 11976 with 11978.

Downloaded from http://mnras.oxfordjournals.org/ at University of North Dakota on June 11, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System